

In the Claims

Claim 1 (Previously presented): A biomimetic organic/inorganic composite comprising: a fluid-swellaable, fibrous organic matrix comprising fibers and interstitial spaces; and an inorganic mineral phase of amorphous or crystalline structure that coats and infiltrates each of said fibers, and is embedded in said interstitial spaces.

Claim 2 (Previously presented): The organic/inorganic composite of claim 1, wherein the fibers of said fluid-swellaable, fibrous organic matrix are substantially parallel to one another.

Claim 3 (Previously presented): The organic/inorganic composite of claim 1, wherein each of said fibers comprises fibrils, wherein said interstitial spaces comprise gaps and grooves in and between said fibrils, and wherein said inorganic mineral phase is embedded in said gaps and grooves.

Claim 4 (Cancelled)

Claim 5 (Previously presented): The organic/inorganic composite of claim 4, wherein said inorganic mineral phase comprises crystals that are non-faceted.

Claims 6 - 7 (Cancelled)

Claim 8 (Currently amended): The organic/inorganic composite of claim 1, wherein said fluid-swellaable, fibrous organic matrix comprises at least one material selected from the group consisting of collagen, elastin, chitin, cellulose, ~~chitosan, and peptide nanofibers~~ and chitosan.

Claims 9 – 10 (Cancelled)

Claim 11 (Previously presented): The organic/inorganic composite of claim 1, wherein said fluid-swellaable, fibrous organic matrix comprises collagen.

Claim 12 (Cancelled)

Claim 13 (Previously presented): The organic/inorganic composite of claim 11, wherein said collagen comprises collagen fibers, wherein each of said fibers comprises abutting fibrils with gaps and/or grooves arranged within and between said abutting fibrils, and wherein said inorganic mineral phase is embedded within said gaps and/or grooves.

Claim 14 (Cancelled)

Claim 15 (Currently amended): The organic/inorganic composite of claim 1, wherein said inorganic mineral phase comprises ~~at least one member selected from the group consisting of calcium phosphate, calcium carbonate, hydroxyapatite, strontium carbonate, calcium sulfate, calcium oxalate, magnesium-bearing calcium carbonate, and magnesium-bearing calcium phosphate~~ calcium phosphate.

Claims 16 – 18 (Cancelled)

Claim 19 (Previously presented): The organic/inorganic composite of claim 1, wherein said composite further comprises one or more biologically active agents on or within said composite.

Claim 20 (Original): The organic/inorganic composite of claim 19, wherein said one or more biologically active agents are selected from the group consisting of medicaments; vitamins; mineral supplements; substances used for the treatment, prevention, diagnosis, cure or mitigation of disease or illness; substances affecting the structure or function of the body; drugs; antimicrobial agents; antifungal agents; antibacterial agents; antiviral agents; antiparasitic agents; growth factors;

angiogenic factors; anaesthetics; mucopolysaccharides; metals; cells; acid mucopolysaccharides; proteins; enzymes, peptides; and wound healing agents.

Claim 21 (Original): The organic/inorganic composite of claim 20, wherein said one or more biologically active agents are seeded on said composite or embedded within said composite.

Claim 22 (Previously presented): The organic/inorganic composite of claim 20, wherein said one or more biologically active agents are pendantly attached to said fluid-swellaable, fibrous organic matrix or said inorganic mineral phase.

Claim 23 (Previously presented): The organic/inorganic composite of claim 20, wherein said one or more biologically active agents are embedded within said organic fluid-swellaable, fibrous organic matrix, or said inorganic mineral phase, or both.

Claim 24 (Previously presented): The organic/inorganic composite of claim 1, wherein said organic/inorganic composite is in a form selected from the group consisting of an injectable liquid, a malleable paste, a malleable putty, a particulate, a film, a coating, a molded solid, and a preformed solid.

Claims 25 - 30 (Cancelled)

Claim 31 (Previously presented): The organic/inorganic composite of claim 1, wherein said fluid-swellaable, fibrous organic matrix is biocompatible and bioresorbable.

Claim 32 (Previously presented): The organic/inorganic composite of claim 1, further comprising cells seeded on said composite.

Claim 33 (Cancelled)

Claim 34 (Previously presented): The organic/inorganic composite of claim 1, wherein said fluid-swellaable, fibrous organic matrix comprises a film or coating.

Claims 35 – 78 (Cancelled)

Claim 79 (Previously presented): The biomimetic organic/inorganic composite of claim 1, wherein said fibers of said fluid-swellaable, fibrous organic matrix are fibrils.